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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of

Replacement of Part 90 by Part 88
to Revise the Private Land
Mobile Radio Services and Modify
the Policies Governing Them

PR Docket No. 92-235

To: The Commission

COMMENTS
OF
PAGING NETWORK, INC.

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SUMMARY

While PageNet supports the Commission's goals in this proceeding, it believes the Commission must modify the means used to achieve those goals. Specifically PageNet opposes the adoption of wholesale narrowbanding of the spectrum on the grounds that channel splitting will not result in the across-the-board increases in spectrum efficiency the Commission seeks to attain. PageNet believes that channel allocations of 25 kHz or more must be preserved for paging and other purposes where user needs require the broader bandwidth and spectrum efficiency standards are met. In addition the Commission's regulatory scheme must be sufficiently flexible to accommodate future needs and changing technologies. Finally, the Commission must acknowledge the distinct differences between two-way SMR services and one-way messaging/paging services in the new Part 88 by maintaining separate categories for the two services.

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COMMENTS OF PAGING NETWORK, INC.

Paging Network, Inc. ("PageNet"), by its attorneys and pursuant to Section 1.415 of the Commission's rules, 47 C.F.R. § 1.415, hereby submits its Comments in response to the Commission's Notice of Proposed Rulemaking ("Notice") issued in the above-captioned proceeding.

I. BACKGROUND

PageNet is the largest and fastest growing paging carrier in the nation, providing both radio common carrier ("RCC") and private carrier paging ("PCP") services to over 2.5 million subscribers in twenty-eight states and the District of Columbia. Much of PageNet's recent growth has occurred on PCP frequencies. As such, PageNet is intimately familiar with and has a vital interest in the rules which govern its operation under Part 90.

PageNet applauds the Commission's efforts to overhaul Part 90, and agrees that steps much be taken to

promote more efficient use of the channels allocated to private land mobile radio services, and to simplify the policies governing these bands. The PLMRS bands below 512 MHz are primarily licensed on a shared basis, and in recent years, congestion on these bands, particularly in major urban areas, has resulted in degradation in service to end-users, including poor quality signals and transmission delays. The Commission's proposals seek to remedy these problems and accommodate future growth in these bands by promoting spectrum efficiency and quadrupling the number of channels in the 421-512 MHz bands while tripling the number of channels in the 72-76 MHz and 150-170 MHz bands.

PageNet is concerned, however, that the means the Commission has proposed to achieve enhanced spectral efficiency are not, in fact, the best, or in some cases even a reasonable way to achieve that end. In particular, PageNet believes that the Commission would be ill-advised to adopt wholesale narrowbanding as a vehicle to enhance spectrum efficiency. Instead, PageNet believes that encouraging use of more efficient technologies will achieve the Commission's goals in many instances, as, for example, in the case of the ever-faster signalling speeds on current 25 kHz paging channels which are producing ever-increasing throughput to greater numbers of subscribers.

The Commission's Notice includes a proposal to re-channelize and require narrowband operations throughout the target frequency bands. Specifically, the Commission

proposes to split the 25 kHz channels in the 421-512 MHz bands to 6.25 kHz, and the 15 kHz channels at 72-76 MHz and 150-170 MHz to 5 kHz. In addition, the Commission proposes to offer licensees the ability to earn exclusivity on a channel.

The Commission further proposes to group the services governed by the new Part 88 into four categories, specifically Public Safety, Non-Commercial, Specialized Mobile Radio and a General Category encompassing all three services.

As detailed below, PageNet believes the public interest will be disserved if the Commission's regulatory scheme equates spectral efficiency with the number of channels obtained, if its channelization scheme does not accommodate diverse new technologies, and if clearly distinct services are governed and restricted by the same rules under a blanket categorization scheme. PageNet urges the Commission, therefore, to revise its proposals to accommodate these concerns. PageNet also suggests the Commission make certain specific changes in the rules proposed for Part 88 that will directly affect the operations of PCP licensees.

II. DISCUSSION

A. CHANNEL SPLITTING DOES NOT NECESSARILY RESULT IN SPECTRUM EFFICIENCY

PageNet is concerned that the Commission's channel splitting proposal blurs the distinction between spectrum

efficiency and channel abundance. PageNet strongly supports the position expressed on this subject by the National Association of Business and Educational Radio, Inc. (NABER) in its comments in this proceeding. In adopting a channelization scheme, PageNet urges the Commission to recognize that by producing a copious number of channels available for licensing through channel splitting, it will not necessarily achieve its stated goal of improving spectral efficiency, and may, in some circumstances, thwart it.

PageNet is, of course, familiar with the current state of paging and the efficiencies that have been and are being achieved with new technological advances. PageNet believes that current 25 kHz paging channels must be preserved in order to achieve the spectral efficiencies to be gained from these new technologies. As explained below, new modulation schemes, such as TDMA, using a 25 kHz channel, may be more spectrally efficient, i.e., carry more messages within the channel, than four 6.25 kHz channels. In essence, the whole can be and in this instance is, in a very real sense, greater than the sum of its parts.

To that end, PageNet supports the Commission's proposal to preserve 25 kHz paging channels in the 150 kHz band. With the advent of compression, and technologies such as CDMA and TDMA, there is no need to split channels in order to achieve spectral efficiency. Indeed, private carrier paging at 929 MHz offers an excellent example of technological efficiencies resulting from "wideband"

allocation, with signalling speeds now on the verge of producing channel capacity in excess of 400,000 subscriber units per frequency.

Conversely, narrower bandwidths would reduce channel capacity and compromise system performance. Narrowband channels, e.g., 5 kHz or 6.25 kHz, would mandate slower signalling speeds and result in dramatic inefficiencies. For example, 5 kHz maximum bandwidth imposes a 1200 baud limit on the system, whereas superior

efficiencies could be accommodated with 25 kHz bandwidth which

**B. THE COMMISSION MUST ADOPT A FLEXIBLE CHANNELIZATION
SCHEME INCORPORATING CONTIGUOUS BLOCKS OF SPECTRUM**

PageNet cautions the Commission against implementing a channelization scheme that is based on currently available technologies, or one which forces equipment manufacturers to focus their research and development on one type of technology. Some future paging technologies may require a minimum of 25 kHz of bandwidth, and in some cases will need far more. The Commission's scheme must provide the flexibility to accommodate these future needs, and make it feasible for carriers to aggregate blocks of spectrum in order to be able to provide innovative messaging services.

Therefore, PageNet supports NABER's proposal for licensing bandwidth based on need, where an applicant requesting bandwidth would be required to demonstrate both its need for the bandwidth and that the request meets the efficiency standard presently being developed by the Telecommunications Industry Association, or complies with such standards as the Commission might adopt itself. Such a flexible scheme would allow for the accommodation of a variety of technologies, as dictated by user needs, including CDMA, TDMA, FDMA, single sideband/ACSB, digital technologies and linear modulation.

User needs will dictate which technology is the best choice. Narrowband technology is not the most efficient

solution in all cases. For example, an EMS technician requires superior precision and reliability of transmission of medical data on a patient, while taxi service can tolerate a much lesser level of service. Similarly, the transmission of suitably accurate finger print data to law enforcement officials imposes far greater spectral demands than the transmission of routing and tracking data to a courier service delivering packages.

The architecture of future personal messaging services is likely to include frequency reuse patterns, and require broadband channels that can be subdivided into messaging, signalling and talk-back channels. Meeting the public's demand for new innovative services may entail use of broadband channels far exceeding 25 kHz and perhaps as wide as 250 kHz. Acquiring the necessary bandwidth through individual acquisitions would require an operator such as PageNet to complete numerous acquisitions in each market in order to provide an innovative new service, in addition to a comparable number of FCC applications to transfer control or assign those acquired frequencies to PageNet. The transaction costs would be exorbitant, the delays lengthy and the chance of acquiring sufficient channels extremely remote. Ultimately, the public would simply be denied the new service.

The Commission must bear these realities in mind in deciding the channelization and licensing schemes for Part 88 services. Current 25 kHz channels must be preserved for

paging. In addition, provision should be made for even greater bandwidths where needed and where appropriate efficiency standards are met. Furthermore, strict adherence to construction deadlines should be required to provide adequate safeguards against the prospect of channels remaining "parked out" for excessive periods of time and to assure that applicants are ready, willing and able to build systems and promptly provide service to the public.

C. IN DEVISING NEW SERVICE CATEGORIES, THE COMMISSION MUST KEEP COMMERCIAL PERSONAL MESSAGING SERVICES AND SPECIALIZED MOBILE RADIO SERVICES SEPARATE AND DISTINCT

The Commission's Notice proposes a consolidation of service pools, specifically, to consolidate the current radio services into three broad categories (Public Safety, Non-

~~Commercial and Specialized Mobile Radio) plus a General~~

units per channel, while for paging there are no loading standards and the number of units per channel, if properly and efficiently loaded, will be in the hundreds of thousands. Given the extreme differences in the nature of the services, different rules necessarily must apply. For example, as concerns slow growth, an SMR system involves very expensive equipment and a different demand curve than a PCP system. Whereas a large SMR system might merit an extended slow growth period because loading and financing may be more difficult to obtain due to lesser demand, an aggressive nationwide PCP operator would require no more than eighteen months to construct a slow growth system. Making the rules the same for both services would disserve the end-user, however, because allowing the PCP operator more extended periods, comparable to SMRs', to construct its system removes valuable frequencies from the pool for an extended period of time without the guarantee of concomitant service benefits. The result is unnecessary delays in service to the public.

Similarly, there are technical differences between SMR and PCP systems. Paging systems require more base station power than SMR systems; users can receive reliable service at lower dBus from SMR mobiles. Therefore, the two services should not be bound by the same rules.

The current regulatory environment respecting messaging services is in transition.² Pending the further evolution of the regulatory landscape, PageNet recommends, at the least, that messaging be kept separate from two-way mobile. Specifically, PageNet recommends creation of a fourth service category for Portable Personal Messaging Services which would be comprised of all personal messaging services, private, commercial and advanced messaging services. SMRs would remain a separate service.

Alternatively, in a three pool scheme, the Commission should categorize services as Public Safety Radio Services, Non-Commercial Radio Services (including private paging at 150, 450 and 900 MHz), and Commercial Radio Services (comprised of commercial personal messaging (paging and AMS) and two-way mobile (SMR) as separate sub-categories), as well as the General Category pool.

D. SUGGESTED REVISIONS TO SPECIFIC RULE SECTIONS IN PART 88

PageNet has reviewed Part 88 as proposed in the Commission's Notice and has identified certain rules which

² See, Amendment of the Commission's Rules to Provide Channel Exclusivity To Qualified Private Paging Systems at 929-930 MHz, PR Docket No. 93-35, NPRM released March 31, 1993 ("the PCP Exclusivity Proceeding"); Amendment of the Commission's Rules to Permit Private Carrier Paging Licensees to Provide Service to Individuals, PR Docket No. 93-38, NPRM released March 12, 1993 ("the PCP Eligibility Proceeding"); H.R. 2264, 103rd Cong., 1st Sess., Subtitle C, Communications Licensing Improvement, 139 Cong. Rec. H2816 (May 25, 1993) ("Licensing Improvement Act of 1993").

require revision or clarification, consistent with the changes recommended above. The specific rules and the revisions which PageNet recommends be made are set forth

§ 88.87 Modification of license.

Subsections (b) and (c) should be revised to

not considered to be placed in operation unless at least one associated mobile station or pager unit is also placed in operation, except that at least two mobile stations must be placed in operation for trunked systems."

§ 88.305 Frequency coordination requirements.

This section should be revised to include a requirement that applications for control facilities in the 72-76 MHz band include a certification that there are no co-channel facilities (private or common carrier) within 70 miles. This revision is needed to resolve problems that currently arise from the fact that this band is shared between private and common carrier licensees.

III. CONCLUSION

PageNet supports the Commission's efforts to increase spectrum efficiency in the bands below 512 MHz, thereby providing for better service to the public and the continued growth of the private radio land mobile services. PageNet cautions the Commission, however, not to confuse spectral efficiency with the sheer quantum of channels, and to adopt a flexible channelization scheme which will not "straight jacket" these bands but accommodate a variety of current and future technologies according to user needs. Finally, PageNet believes that end-users will best be served

where its rules treat two-way mobile and commercial personal messaging as the distinct services they are.

Respectfully submitted,

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